

PRESS RELEASE

First volume automotive manufacturer from Vietnam

Dürr builds a highly automated paint shop with integrated IIoT solutions for VinFast

Chennai, October 10th, 2018 – Start-ups from outside the automotive sector are entering the automotive market more and more frequently. VinFast is a subsidiary of Vingroup, and is the first volume automotive manufacturer from Vietnam with a particular ambition: a smart factory where 250,000 cars per year in the first phase, initially with conventional drives and in the future also with electric drives, will roll off the production line. The paint shop in the factory in Haiphong is currently being installed by Dürr. It is highly automated and features integrated Industrial Internet of Things (IIoT) technology. In addition, an innovative layout concept permits a building design that dramatically reduces the space required and costs involved.

VinFast is a start-up of the VinGroup, the largest non-state owned listed company in Vietnam with a market capitalization of approximately VND 340 trillion (USD 14.6 billion) as of July 31, 2018. Vingroup's strategy is to become the leading technology - industry company in Vietnam and the region. The VinFast brand is the Group's first foray into the mobility market, which offers enormous growth potential due to the strong increase in demand for vehicles in Southeast Asia.

VinFast intends to establish itself with various models delivering best-in-class quality and produced in a factory equipped with state-of-the-art technology that enables transparent, lean processes. In order to achieve this ambitious investment objective in the area of the paint shop, VinFast commissioned Dürr to handle this project. "Our paint shop will be the biggest in Vietnam, and highly automated

**Dürr Systems AG
Marketing**
Carl-Benz-Str. 34
74321 Bietigheim-Bissingen

Tel +49 7142 78-2614
info@durr.com
www.durr.com

through the integration of numerous IIoT applications. This makes it the benchmark for outstanding quality combined with the best operating costs, the highest ecological standards, and a high level of occupational safety,” explains James Deluca, CEO of VinFast Trading and Production Company.

Patented layout concept for a lean building

The VinGroup constructed the building for the paint shop based on the patented layout concept developed by Dürr in a record time of just short of eight months. The layout minimizes the investment and operating costs, not least since it only needs two levels and no so-called penthouse. The compact design enabled the concreted area to be reduced by approx. 15,000 m². This corresponds to a saving of more than 20% compared with a conventional concept.

VinFast’s requirement of maximum automation of production processes and logistics is met with IIoT-capable machines from end to end. They are comprehensively controlled, monitored, and supervised in real time using control technology from Dürr. This makes it possible to test and optimize the overall equipment efficiency (OEE), for example.

Flexible technology for future targets

Just how precisely the paint shop technology meets the requirements of VinFast while remaining flexible for changes in the future is demonstrated by the oven. The **EcoInCure** oven achieves the best possible quality when it comes to the top coat appearance thanks its heating process from the inside out and optimized air flow. Each body gets a digital quality certificate for the drying process. The data from the IIoT-capable oven is collected and evaluated by the control technology for this. In addition, **EcoInCure**’s innovative, space-saving transverse mode of operation in combination with a central high-bay warehouse makes it ideal for the compact building concept.

The principle of heating from the inside is particularly beneficial for bodies with different material thicknesses (a perfect example is electric vehicles with their reinforced frame on the underbody). The innovative EcoInCure drying method significantly reduces thermal component stresses compared with conventional ovens. VinFast is therefore well prepared technically for the future expansion of the model range to include electric vehicles.

The new VinFast paint shop will also be equipped with the latest generation of the fully automatic EcoPaint robot. This includes the extremely mobile painting robots with seven-axis kinematics, which do not need a rail. This saves space and investment costs. Equipped with a whole range of sensors, they are prepared for the requirements of an Industry 4.0 environment. The robots supply real-time data that is analyzed and evaluated using the latest software products from Dürr.

((Additional Information))

In addition to the EcoInCure innovations and seven-axis robots described, Dürr will also be installing further technical highlights in the VinFast paint shop:

- **RoDip rotational dip process**

The efficient RoDip rotational dip process will be used at VinFast throughout the PT/EC (pre-treatment and electrocoating) area. The rotational movement of the bodies does away with the need for entry and exit inclines at the immersion tank, thereby making the tanks more compact. This reduces the unit costs, because the smaller tank capacity means that RoDip uses less energy, less water, and fewer chemicals than other technical solutions.

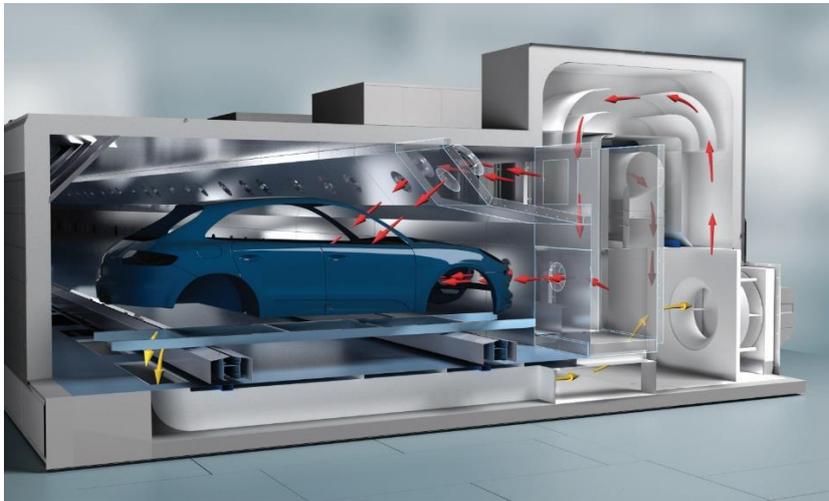
- **EcoDry X dry separation**

EcoDry X for dry paint overspray separation is a multi-stage, easy-to-handle filter system that comprises filter trolleys with six filter boxes each and downstream pocket filters as the second filter stage. The semi-automatic separation system sets the standard for high separation capacity and low filter costs.

With all of these state-of-the-art technologies, the new paint shop for VinFast is geared towards the strategic goals of the start-up: highest quality standards at the lowest operating costs, low environmental impact, and high health protection and occupational safety with high future security.

Dürr Systems AG
Marketing
Carl-Benz-Str. 34
74321 Bietigheim-Bissingen

Tel +49 7142 78-2614
info@durr.com
www.durr.com



Improved paint quality thanks to **EcoInCure** by heating the body from the inside.

About Dürr India

The Dürr Group has had a direct representation in India since 1997, and Schenck RoTec has since 1986. The Dürr Group currently employs around 590 staff there, offering the entire portfolio including sales and service: Dürr India, based in Chennai, offers painting, application, final assembly and energy efficiency technology products as well as exhaust-air purification systems. Since April 2015, Dürr India has also been offering on-the-job as well as classroom training in paint and application systems to customers at its new training center. Schenck RoTec India, in Noida, is responsible for balancing technology as well as for testing and filling technology. The HOMAG Group has a presence in Bangalore, where it operates a production site (HOMAG Machinery Bangalore) and sales and service company HOMAG India.

The Dürr Group is one of the world's leading mechanical and plant engineering firms with extensive expertise in automation and digitization/Industry 4.0. Products, systems and services offered by the Group enable highly efficient manufacturing processes in different industries. Dürr supplies sectors like the automotive industry, mechanical engineering, chemical, pharmaceutical and woodworking industries. The company has 92 business locations in 31 countries. The Group generated sales of € 3.71 billion in 2017. Dürr has around 15,000 employees and operates in the market with five divisions:

- **Paint and Final Assembly Systems:** paint shops and final assembly systems for the automotive industry
- **Application Technology:** robot technologies for the automated application of paint, sealants and adhesives
- **Clean Technology Systems:** exhaust-air purification systems and energy efficiency technology
- **Measuring and Process Systems:** balancing equipment as well as assembly, testing and filling technology

Dürr Systems AG
Marketing
Carl-Benz-Str. 34
74321 Bietigheim-Bissingen

Tel +49 7142 78-2614
info@durr.com
www.durr.com

PRESS RELEASE



- **Woodworking Machinery and Systems:** machinery and equipment for the woodworking industry

Contact:

Dürr India Private Limited

Kabilan Veeraiyan

Management Systems & Marketing

Phone +91 44 43 93 1-606

E-Mail: kabilan@durrindia.com

www.durr-india.com

www.durr.com

Dürr Systems AG
Marketing
Carl-Benz-Str. 34
74321 Bietigheim-Bissingen

Tel +49 7142 78-2614
info@durr.com
www.durr.com